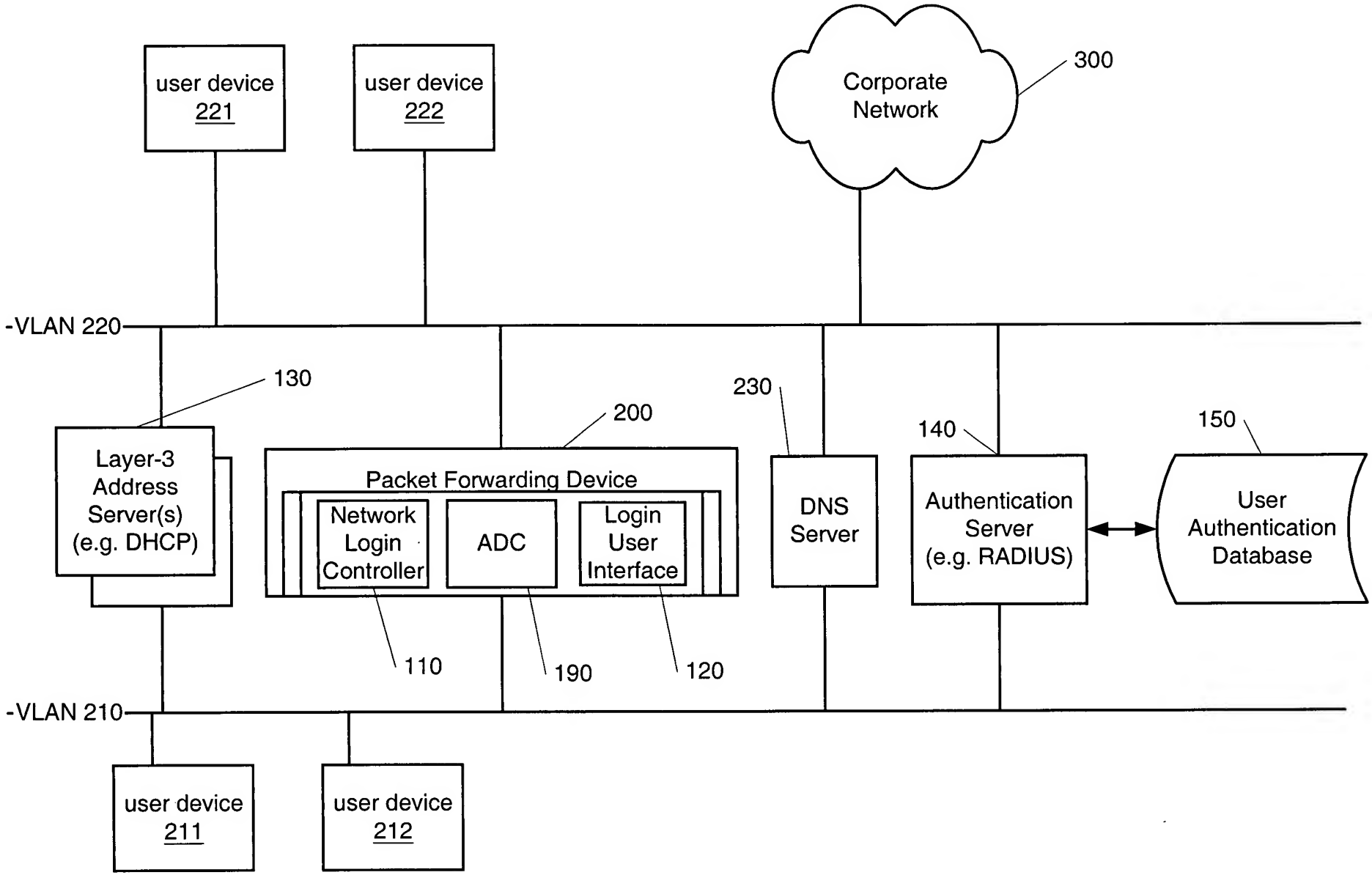
user device
221
user device
222
Corporate
Network
300
-VLAN 220
130
230
200
140
150
Layer-3
Address
Server(s)
(e.g. DHCP)
Packet Forwarding Device
Network
Login
Controller
ADC
Login
User
Interface
DNS
Server
Authentication
Server
(e.g. RADIUS)
User
Authentication
Database
110
190
120
-VLAN 210
user device
211
user device
212

FIG. 1

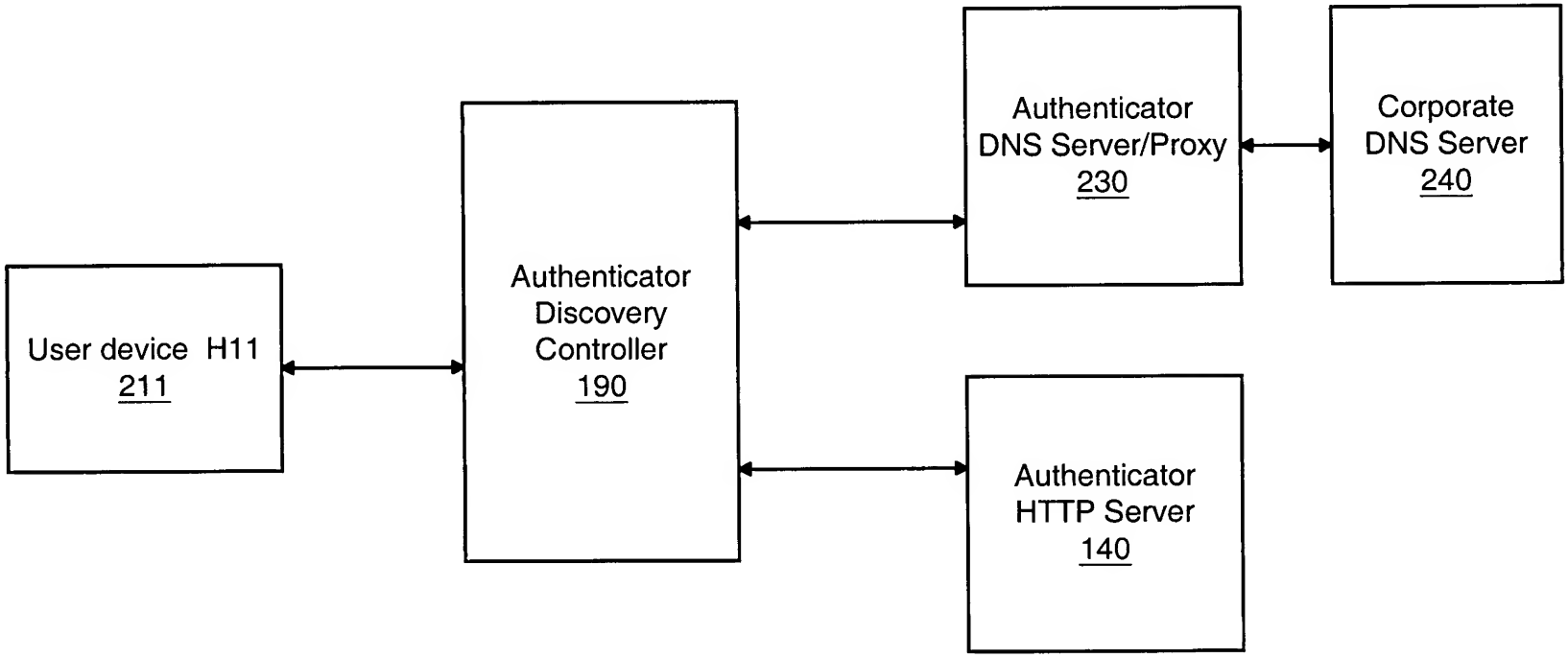
User device H11
211
Authenticator
Discovery
Controller
190
Authenticator
DNS Server/Proxy
230
Corporate
DNS Server
240
Authenticator
HTTP Server
140

FIG. 2

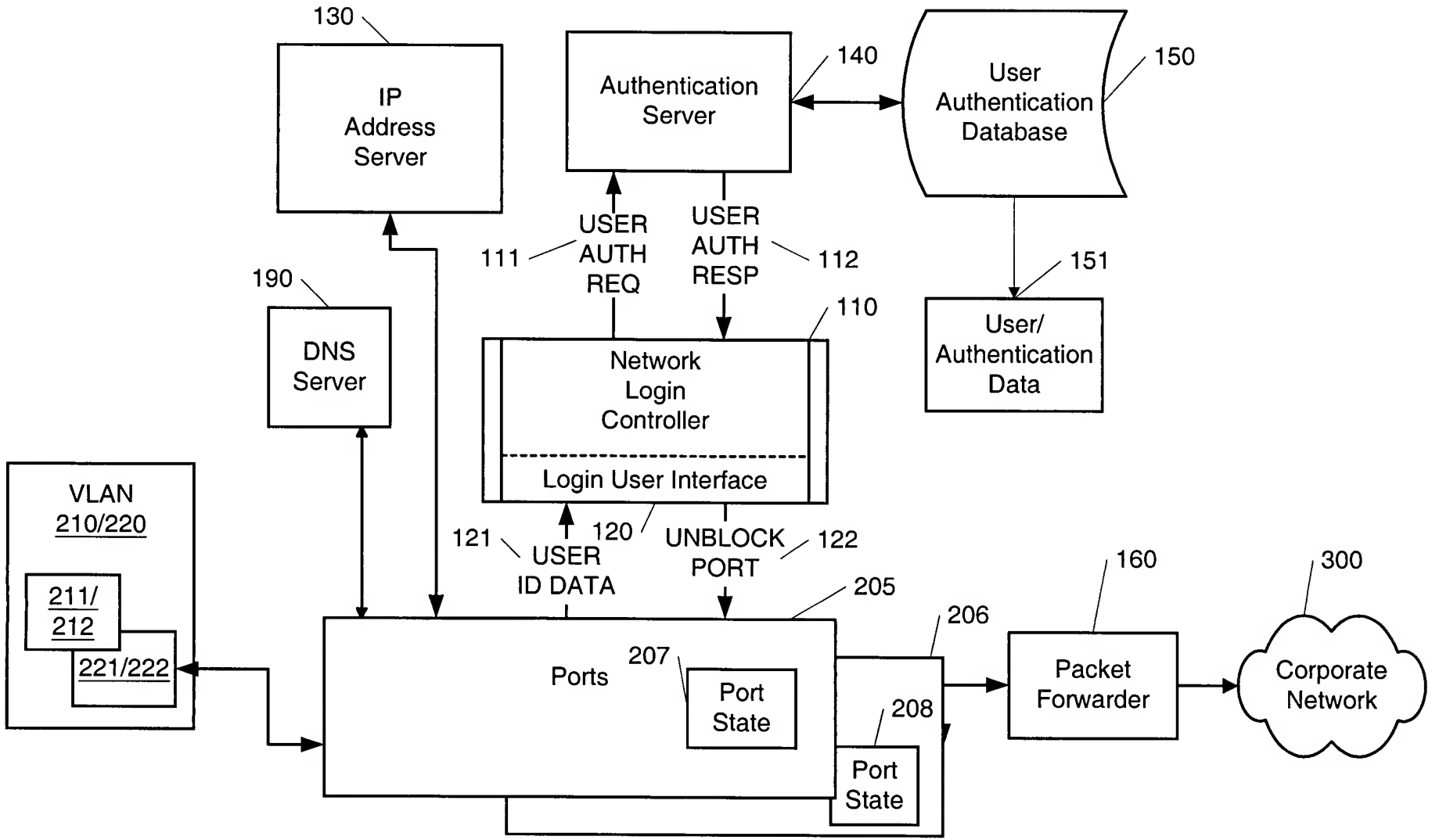
130
IP Address Server
Authentication Server
140
User Authentication Database
150
111
USER AUTH REQ
USER AUTH RESP
112
190
DNS Server
110
Network Login Controller
Login User Interface
151
User/ Authentication Data
VLAN 210/220
211/ 212
221/222
121
USER ID DATA
120
UNBLOCK PORT
122
205
206
160
300
207
Ports
Port State
208
Port State
Packet Forwarder
Corporate Network

FIG. 3

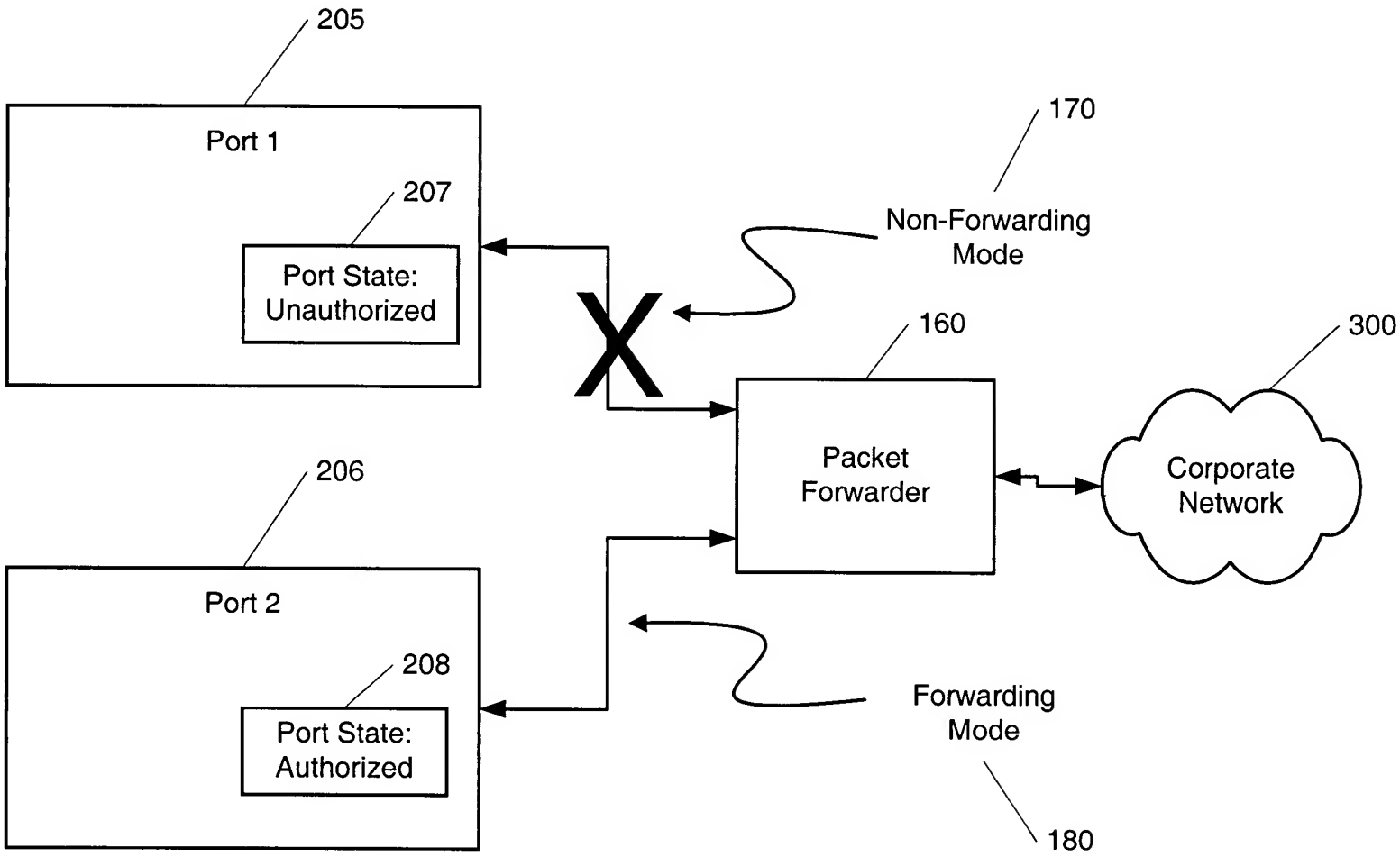
205
Port 1
207
Port State:
Unauthorized
170
Non-Forwarding
Mode
160
300
Packet
Forwarder
Corporate
Network
206
Port 2
208
Port State:
Authorized
Forwarding
Mode
180

FIG. 4

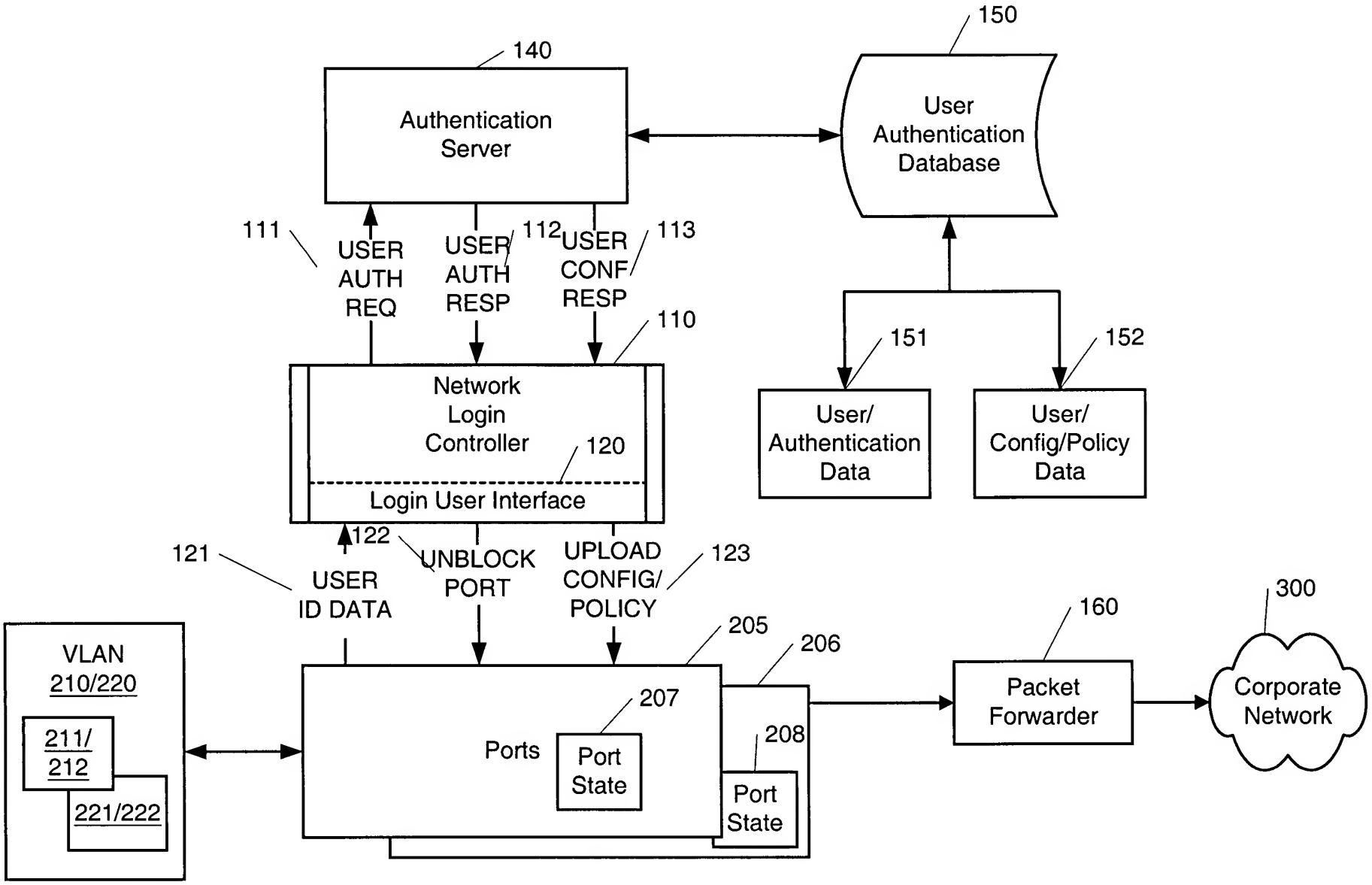
150
140
Authentication Server
User Authentication Database
111
USER AUTH REQ
USER AUTH RESP
112
USER CONF RESP
113
110
Network Login Controller
120
Login User Interface
151
152
User/ Authentication Data
User/ Config/Policy Data
121
122
USER ID DATA
UNBLOCK PORT
UPLOAD CONFIG/ POLICY
123
VLAN 210/220
211/ 212
221/222
205
206
207
Ports
Port State
208
Port State
160
Packet Forwarder
300
Corporate Network

FIG. 5

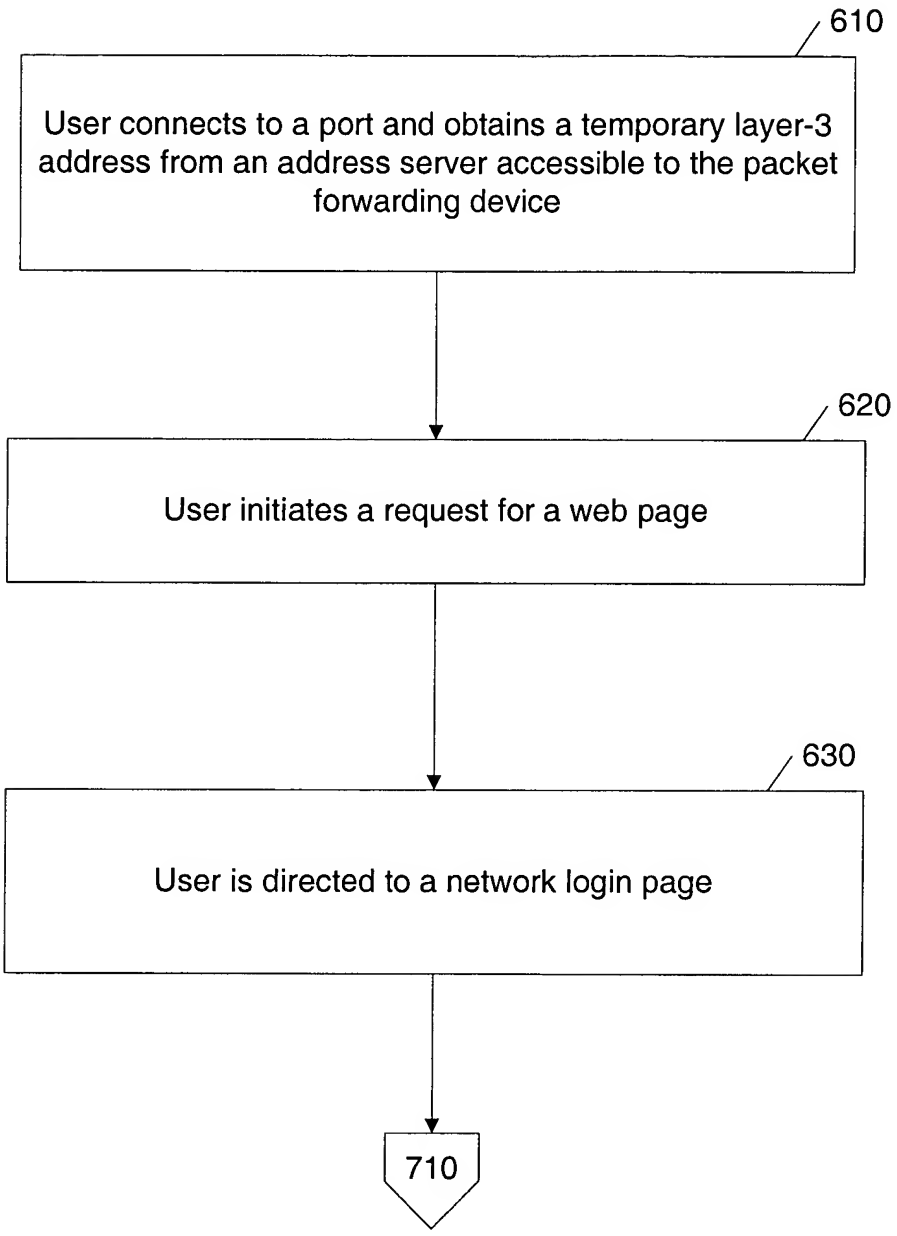
610
User connects to a port and obtains a temporary layer-3 address from an address server accessible to the packet forwarding device
620
User initiates a request for a web page
630
User is directed to a network login page
710

FIG. 6

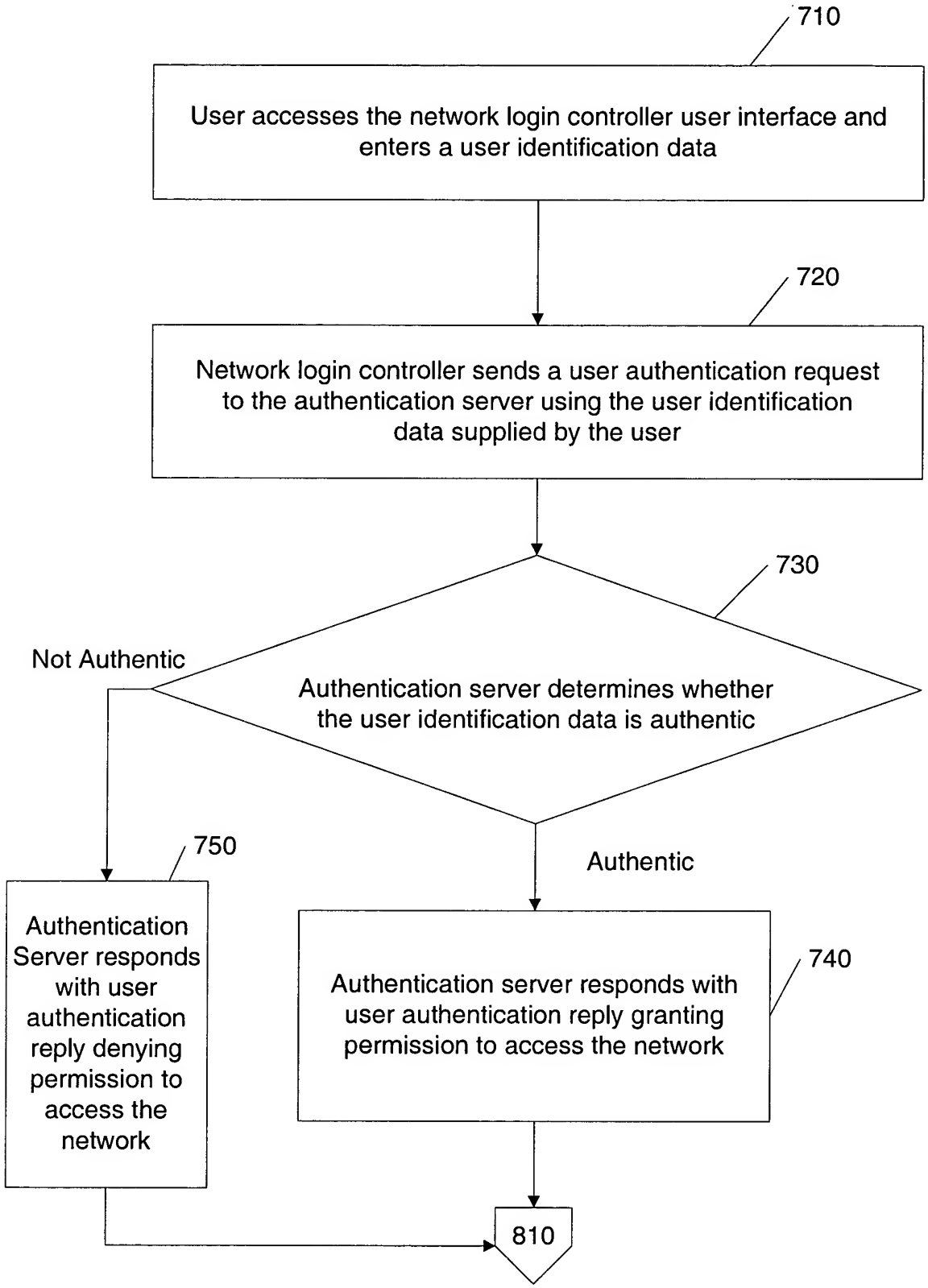
710
User accesses the network login controller user interface and enters a user identification data
720
Network login controller sends a user authentication request to the authentication server using the user identification data supplied by the user
730
Authentication server determines whether the user identification data is authentic
Not Authentic
Authentic
750
Authentication Server responds with user authentication reply denying permission to access the network
740
Authentication server responds with user authentication reply granting permission to access the network
810

FIG. 7

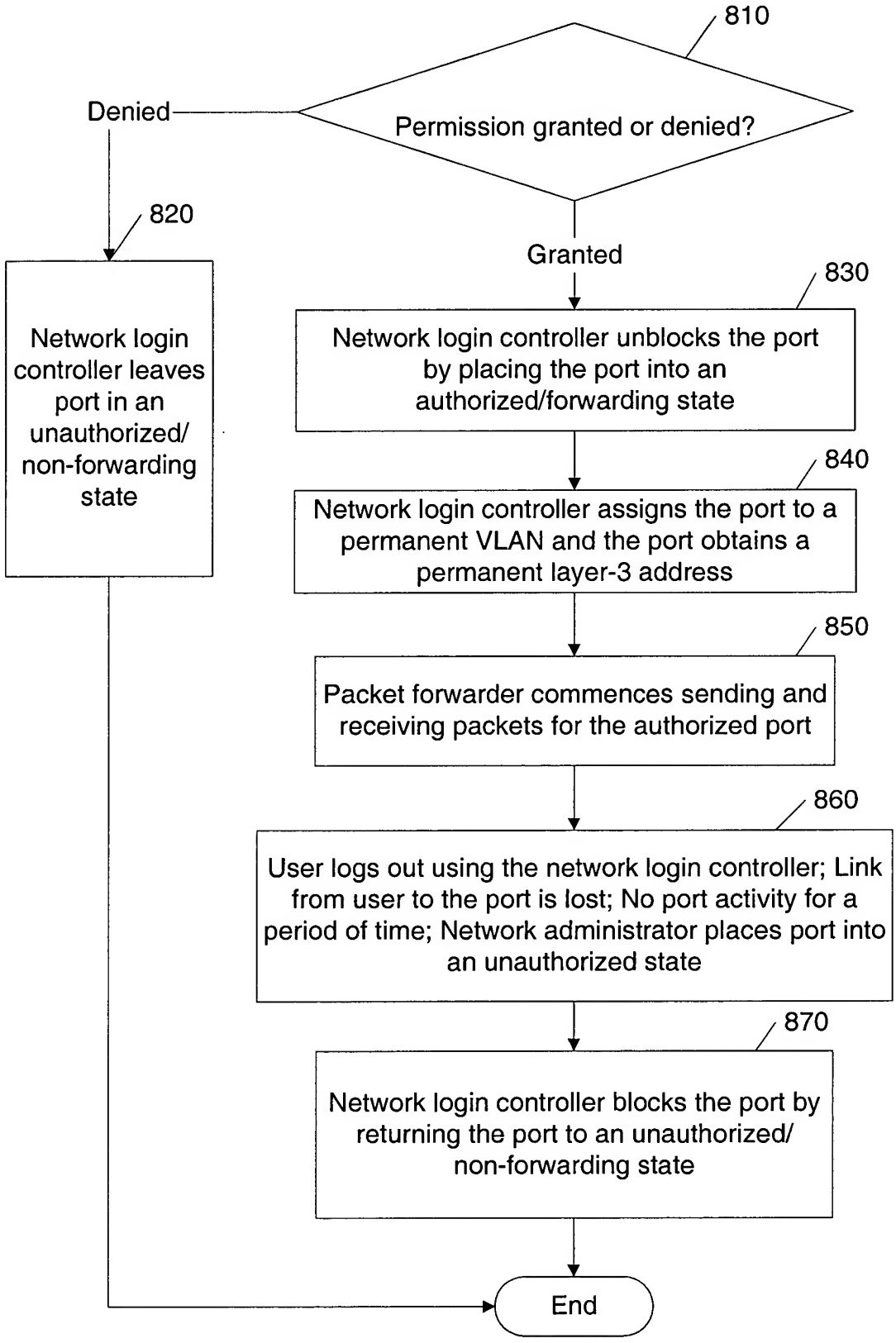
810
Permission granted or denied?
Denied
Granted
820
Network login controller leaves port in an unauthorized/ non-forwarding state
830
Network login controller unblocks the port by placing the port into an authorized/forwarding state
840
Network login controller assigns the port to a permanent VLAN and the port obtains a permanent layer-3 address
850
Packet forwarder commences sending and receiving packets for the authorized port
860
User logs out using the network login controller; Link from user to the port is lost; No port activity for a period of time; Network administrator places port into an unauthorized state
870
Network login controller blocks the port by returning the port to an unauthorized/ non-forwarding state
End

FIG. 8